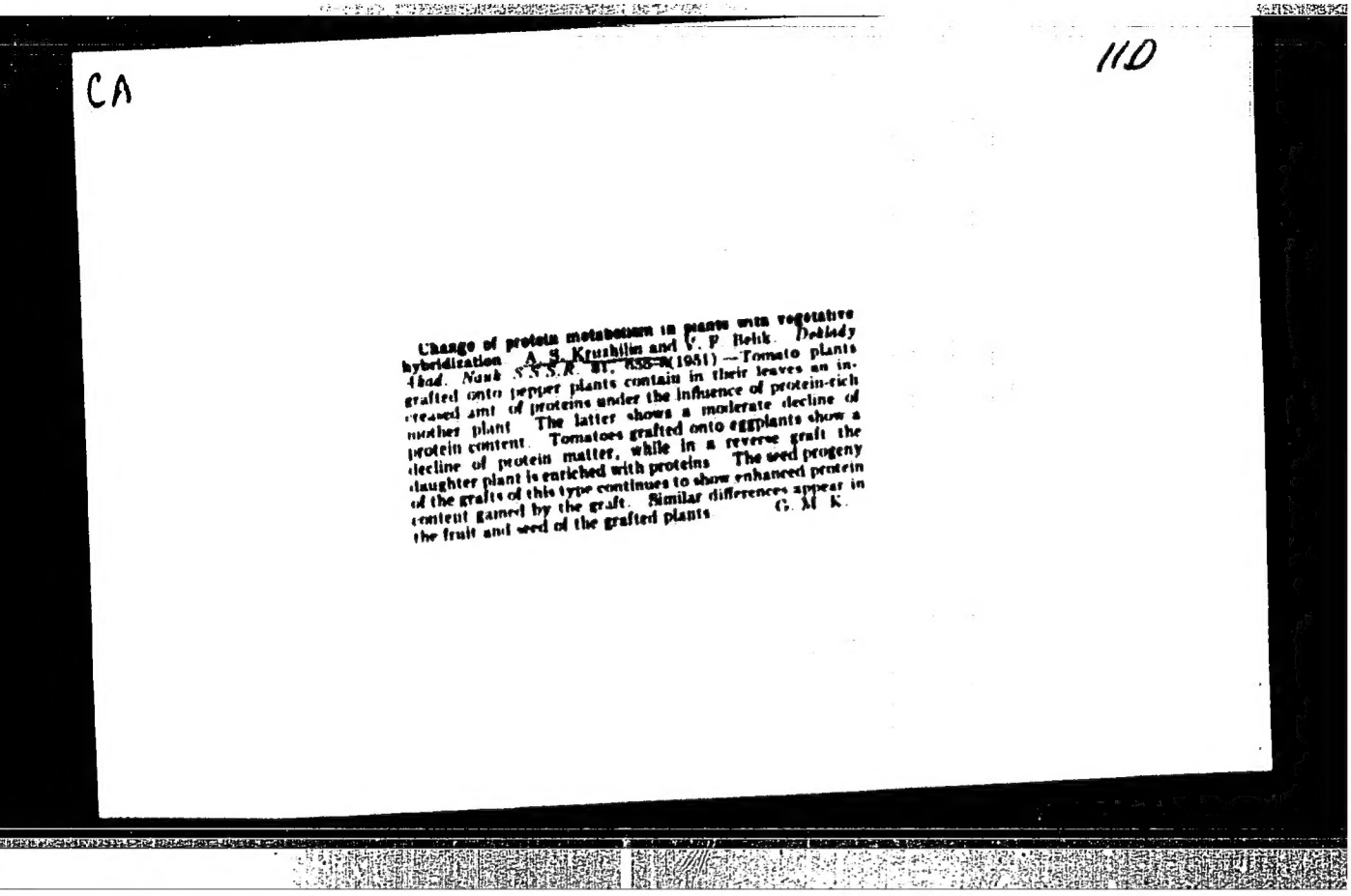
CA

Effect of high temperatures on oxidative processes in cabbage, tomato, and potato plants. A. S. Krushilin, O. A. Zaurakov, and A. Ya. Mikhalev. *Doklady Akad. Nauk S.S.S.R.* 77, 917-20(1951). Field expts during temps. in excess of 30-35° showed that the rates of respiration increased in all plants with increased temp., the rise being greatest in varieties that are "heat-unstable" or poorly resistant to heat. The peroxidase activity is lower during early morning hours in the heat-resistant plants than in the non heat-resistant plants; however, this is reversed during the hot part of the day. In wilting potato and tomato plants, peroxidase activity rises sharply but respiration changes very little. G. M. K.



CA

110

Change of protein metabolism in plants with vegetative hybridization. A. S. Kruzhilin and V. P. Belik. *Doklady Akad. Nauk S.S.S.R.* 81, 853-6(1951).—Tomato plants grafted onto pepper plants contain in their leaves an increased amt. of proteins under the influence of protein-rich mother plant. The latter shows a moderate decline of protein content. Tomatoes grafted onto eggplants show a decline of protein matter, while in a reverse graft the daughter plant is enriched with proteins. The seed progeny of the grafts of this type continues to show enhanced protein content gained by the graft. Similar differences appear in the fruit and seed of the grafted plants. G. M. K.

1. KRUZHILIN, A. S., Prof.

2. USSR (600)

4. Irrigation

7. Biological role of saturation irrigation.
Sov. agron., 10 No.12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

KRUZHILIN, A. S., Prof.

Potatoes - Diseases and Pests

How to combat withering and the busy stunt in plants. Sad i Ogr. No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

KRUZHILIN, A. S.

N/5
632.8
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Biologicheskiye osobennosti oroshayemykh kul'tur (Biological properties of irrigated cultures) Moskva, Gos. Sel'khozgiz, 1954.
380 P. Tables

FD-1356

Card 1/1 - Pub. 42-3/6

Author : Kruzhilin, A. S. and Erval'd, M. A.

Title : Characteristics of phase development and growth of sweet pepper and eggplant

Periodical : Izv. AN SSSR, Ser. biol., 4, 28-34, 1954

Abstract : Cultivation and vernalization of eggplant and pepper seeds and of plants under various temperature and daylight conditions, and acclimatization of germinating seeds to low temperatures (between + 2°C - 2°C) are discussed. Experiments were accompanied by biochemical study of phase development of plants (activity of peroxidase and ascorbic acid content). The purpose of these studies was to determine whether it is practical to promote planting of these crops in Ryazan and adjacent oblasts. Tables. Illustrations. Nine Soviet references.

Institution : Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR

Submitted : December 15, 1953

KRUSHILIN, A. S.

USSR/Plant Physiology

Card 1/1

Authors : Krushilin, A. S. and Erval'd, M. A.

Title : Forms of gradual development of sweet pepper and eggplant

Periodical : Dokl. AN SSSR, 95, 6, 1325 - 1328, 21 Apr 54

Abstract : The article deals with a study of various development phases through which sweet pepper and eggplant pass before they ripen; it considers the duration of every phase in relation to the temperature, length of days and chemical contents.

Institution : ....

Submitted : 27 Feb 54

KRUZHILIN, A.S.

USSR/Biology - Plant physiology

Card 1/1 Pub. 22 - 42/48

Authors : Kruzhilin, A. S., and Shvedskaya, Z. M.

Title : Physiological changes in plants of biennials in the process of development when grafted into one-year plants.

Periodical : Dok. AN SSSR 98/3, 487-490, Sep 21, 1954

Abstract : The physiological changes occurring in biennial plants in the process of development, when grafted into one-year plants, are scientifically explained. Seven USSR references (1939-1952). Graphs.

Institution : Acad. of Sc. USSR, The K. A. Timiryazev Institute of Plant Physiology

Presented by: Academician A. L. Kursanov, June 18, 1954

KRUZHILIN,A.S.

Nature of physiological processes in grafted plants. Fiziol.rast. 2 no.1:20-29 Ja-F '55. (MLRA 8:9)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva, Moscow (Botany--Physiology) (Grafting)

KRUZHILIN, A.S.; NAZIROV, N.N.

Peculiarities of the phasic development of some varieties of cotton [with English summary in insert]. Fiziol.rast. 3 no.3:199-203 My-Je. '56. (MIRA 9:9)

1.Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moskva.
(Cotton) (Growth (Plants))

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Effect of mineral nutrition on the properties of plants [with English summary in insert]. Zhur.ob.biol. 17 no.6:436-442 N.D. '56. (MIRA 10:9)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva AN SSSR
(FERTILIZERS AND MANURES)
(BOTANY--PHYSIOLOGY)

COUNTRY : USSR
CATEGORY : Cultivated Plants. Industrial, Oleiferous, Sugar. M

ABS. JOUR. : RZhBiol., No. 23 1958, No. 104760

AUTHOR : Kruzhilin A. S., Nazirov, N. N.
INST. : Institute of Plant Physiology, AS Uzbek SSR
TITLE : The Influence of Mineral Nutrition on the Passage of Developmental Stages in Cotton Plant.

ORIG. PUB. : Izv. AN UzSSR, Ser. biol., 1957, No. 2, 33-40

ABSTRACT : In 1954-1956, experiments were started at the hothouse of the Institute of Plant Physiology, to determine the influence of fortified nutrition with NP (double dose) on the rates of the passage of cotton plant through the developmental stages, and also on the periods of the beginning of differentiation in growth joints and initiation of axillary and flower buds. In the period of passing through the vernalization stage, application of the increased dose of P in the background of NK, accelerated the development of the cotton plant by 4-8 days, and application in this period of an increased amount of N

CARD: 1/3

COUNTRY :
CATEGORY :

ABS. JOUR. : RZhBiol., No. 1958 No. 104760 M

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : retarded its development. Use of the double dose of N upon completion of the light stage of development, starting with the period of the initiation of the flower buds, accelerated the growth of the flower buds and the beginning of budding in comparison with the full dose of NPK or with intensified nutrition with P in this period. Conclusion is made on the necessity of regulating doses of the application of N and P in the supplementary dressings, depending on the passage of the developmental

CARD: 2/3

USSR/Cultivated Plants - Potatoes. Vegetables. Melons. etc. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15639

Author : A.S. Kruzhilin, Z.M. Shvedskaya

Inst : The Institute for Plant Physiology, Academy of Sciences, USSR.

Title : The Role of Roots in the Stage Development of Two Year Old Plants.
(Rol'kornploda v stadiynom razvitii dvukhletnego rasteniya).

Orig Pub : Agrobiologiya, 1957, No 3, 118-122.

Abstract : In tests held at the Institute for Plant Physiology of the Academy of Sciences USSR table beets and carrots were vernalized at a temperature of 0 to + 8° for a period of 3 months which was proved possible only when the roots were preserved.

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USSR/Cultivated Plants - Potatoes. Vegetables. Melons. etc. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15639

Shoots which were vernalized with root fragments (10-15 grams) did not develop. Shoots, vernalized with roots and removed from them immediately before planting, kept shooting for 8-10 days. The carrot seedling was vernalized in light at a temperature of +8 - 10° only during the long days, the plants dying in the darkness. The early cabbage shoot passed through the vernalizing stage during the short day as well. Thus, the passing through the vernalization stage is possible only when there is an accumulation of a specific quantity of stored nutrients and the plants have the capacity to derive these substances (sugars) during the process of photosynthesis.

Card 2/2

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82482

Author : Krizhilin, A.S.
Inst :
Title : The State and the Prospects of Research on the Reciprocal Influence of the Scion and Stock in Plants.

Orig Pub : Zh. obshch. biol., 1957, 18, No 6, 455-463

Abstract : Addition of the results of the studies of Soviet and foreign authors shows that the reciprocal influence of the scion and the stock consists of profound physiological shifts. During this, substances new to them are processed in the components and heredity in the seed offspring changes. The synthesizing ability of the ferments frequently changes. New varieties of wheat, eggplant, potato and tomato have been obtained by the method of vegetative hybridization. Investigations of Sisakyan and Voronkova (1950) with the method of tagged atoms proved

Card 1/2

USSR/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82482

the presence of an exchange of plastic substances between the scion and the stock. The feasibility of directed hereditary variability in plants in grafting has been proven. -- I.K. Fortunatov

Card 2/2

KRUZHILIN, A.S

20-5-42/48

AUTHORS: Kruzhilin, A. S. and Shvedskaya, Z. M.

TITLE: Variations in the Sugar Content in the Course of Vernalisation Process in Biennial Plants (Izmeneniye soderzhaniya sakharov v protsesse yarovizatsii dvukhletnikh rasteniy)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 5, pp. 870 - 873 (USSR)

ABSTRACT: In the investigation of biological peculiarities in the development of biennial plants their sugar content was observed. The usual vernalisation methods were used (direct treatment of the plants with low temperatures). The micro-Bertran analysis showed that the sugar content in the leaves of the vernalised plants was constantly higher in comparison to the control plants. The difference between the disaccharides was greater than between the monosaccharides (table 1). The quantity of sugar (especially of the monosaccharide) in the vernalised carrot leaves was increased to a considerably greater extent than in the cabbage leaves. In January, after the vernalisation, the variations continued in this direction, however, took place considerably more quietly. Experiments were carried out in the course of 3 years and showed distinct variations. Under the influence of low temperatures during the vernalisation the sugars

Card 1/4

20-5-42/48

Variations in the Sugar Content in the Course of Vernalisation Process in Biennial Plants

are stored in the leaves of the biennial plants. Analogous alterations of the sugar content (reference 1) were observed in the sprouting seedlings of biennial plants which were inoculated to one-year plants. Simultaneously with the determination of the sugar content according to micro-Bertran also the qualitative analysis was carried out by means of chromatography according to Boyarkin (reference 2). These analyses showed that the vernalised cabbage- and carrot leaves contained three sugars, i.e. glucose, fructose, and saccharose. The leaves of the vernalised plants contained more fructose than the control leaves. The analyses (table 2) showed that towards the end of the vernalisation the sugar content in the roots of the rapes and carrots and in the cabbage stalks was greater than before the vernalisation. In the case of cabbage the quantity of saccharose exceeded the quantity of the monosaccharose. The inversed ratio was the case in carrots. The authors did not investigate the problem at the cost of which carbohydrate the accumulation of the monosaccharides takes place. The chromatographic determinations on the paper showed that the storing organs of cabbage, carrots, and rapes contain glucose, fructose and saccharose. However, in contrast to the carrot, in the rapes the saccharose takes the main part, with or without vernalisation. Analogous

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Variations in the Sugar Content in the Course of Vernalisation Process in Biennial Plants

alterations of the sugar content were also observed in the vernalisation of grain. Conclusions were drawn (references 3 and 4) that in the vernalisation of the vegetable and grain seeds the sugar content plays a specific-physiological rôle. The authors observed seed carriers during the growth and in the state of flowering after the vernalisation and found a decrease of the sugar content. This takes place especially in earlier growing, sprouting, and flowering plants. Thus the sugar in the storing organs supports - especially the disaccharides - the differentiation of the buds the sprouting and flowering of the plants. In experiments where the roots were eliminated before the vernalisation the development stages were retarded. If the roots were eliminated after the vernalisation the development of the buds was not stopped. Thus the development stages of the carrot and rape buds and the sprouting in the dark depend on the supply of nutritive substances of the root plants. Similar phenomena (references 5 - 7) were found in the case of elimination or exhaustion (reference 8) of the endosperm in the winter corn seeds before the vernalisation. The disaccharide content in vernalised root plants increased in the dark

Variations in the Sugar Content in the Course of Vernalisation Process in Biennial Plants

at 2 - 4°. This content decreased during the growth and sprouting in the dark, however, at 20 - 25°, too. It is to be assumed that the vernalisation and the light stage in cabbage and carrots in the second year is quicker passed than in seedlings, since the sugar content in the storing organs is high. There is 1 figure, 3 tables, and 9 references, 7 of which are Slavic.

ASSOCIATION: Institute for Plant Physiology imeni K. A. Timiryazev AN USSR (Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR)

PRESENTED: June 22, 1957, by A. L. Kursanov, Academician

SUBMITTED: June 20, 1957

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Kruzhilin, A. S., Shvedskaya, Z. M. SOV/20-121-3-45/47

TITLE: Vernalization of Isolated Buds of Biennial Plants in Sugar Solutions (Yarovizatsiya izolirovannykh pochek dvukhletnikh rasteniy v sakharnykh rastvorakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 3, pp 561-564 (USSR)

ABSTRACT: In an earlier paper the authors proved (Ref 1) that the stem buds of Beta vulgaris var. hortensis and Daucus carota cannot be vernalized when they are isolated from the root. This refers to the importance of the nutritive substances for the latter organ in the course of the different stages. Other investigations carried out by the authors showed that in the course of vernalization (Ref 2) and in connection with grafting of biennial plants upon annual plants (Ref 3) a large quantity of sugar types especially of disaccharides is being accumulated in the plants as well as in the roots of biennial plants. Other scientists proved (Refs 4-6) that embryos of winter corn in case they are isolated from the endosperm are only vernalized when their nutrition is sugar. The authors carried out the attempt to vernalize isolated buds of biennial

Card 1/3

Vernalization of Isolated Buds of Biennial Plants in Sugar Solutions

plants in a sugar solution. In connection with preliminary experiments it was found that in the case of isolated buds in sugar solutions (control in water) at 4-7° during 30-40 days no success could be achieved. The experiment was carried out under the following conditions: in the dark chamber of a phytotron at 1-2° during 60 and 74 days on distilled water on 2 and 5 % saccharose solution and on glucose, Beta vulgaris var. hortensis additionally on 10 % saccharose. For comparison seed carriers of the Daucus carota grown in Nantes and of Beta vulgaris var. hortensis grown in Bordeaux were used. They were harvested already before the beginning of the natural vernalizing temperature. On the day the experiment was carried out (October 25) the roots were topped, the buds together with a part of the root separated (5-8 g in the case of Daucus carota, 10-12 g in the case of Beta vulgaris var. hortensis) and bred in Koch-(Kokh) bowls on filter paper in a 30 ml solution. The bowls with the buds were left in the dark-room at 1-2° for 60 and 74 days. From the results (Table 1, Figs 1, 2) the authors were able to draw the following conclusions: 1) The branching buds of Daucus carota after having been isolated from the root undergo the normal vernalization on 2 % glucose solution at 1-2° in a period of 60 days. On

Vernalization of Isolated Buds of Biennial Plants in Sugar Solutions

S/020-121-3-[illegible]/47

[illegible] saccharose or glucose the plants sprout one week earlier. [illegible] are not vernalized on distilled water when mineral substances [illegible] added. This phenomenon emphasized the importance of sugar [illegible] plants. 2) The method of isolating [illegible] on with the investigation of physiological processes [illegible] proceed in the buds in the course of vernalization. There are 2 figures, 1 table, and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR (Institute of Plant Physiology imeni K. A. Timiryazev, AS USSR)

PRESENTED: April 12, 1958, by A. L. Kursanov, Member, Academy of Sciences, USSR

SUBMITTED: June 7, 1957

Card 3/3

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Accelerated seed reproduction of new varieties and hybrids of biennial plants by grafting. Fiziol. rast. 6 no.5:625-626 S-O '59. (MIRA 13:2)

1.K.A. Timiryazev Institute of Plant Physiology U.S.S.R. Academy of Sciences, Moscow.
(Seed production) (Grafting)
(Biennials (Plants))

17(4)
AUTHORS: Kruzhilin, A. S., Shvedskaya, Z. M. SOV/20-124-6-48/55

TITLE: The Effect of Leaves and Root System on the Differentiation of Buds and Growth of 2-Year-old Seed Plants (Vliyaniye list'yev i kornevoy sistemy na differentsiatsiyu pochek i rost semennikov dvukhletnikh rasteniy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1353-1356 (USSR)

ABSTRACT: The authors confirmed in their previous paper (Ref 1) that the buds of 2-year-old seed plants (carrots and garden turnips) do not undergo a vernalization if separated from their roots. It was further determined that the differentiationof buds in the case of head vegetables takes place after vernalization, that is to say, during growing afresh at increased temperatures (exceeding 15°). With cabbage (Brassica) this occurs at low temperatures, however (Ref 2). Resulting from it the question mentioned in the title was raised. In order to clarify this problem turnips of the Bordeaux sort and carrots of the Nantesser sort were subjected to vernalization at their storeroom. Subsequently they were planted into flower pots on

Card 1/3

The Effect of Leaves and Root System on the Differentiation of Buds and Growth of 2-Year-old Seed Plants

SOV/20-124-6-48/55

April 7, 1958. The three primary variants were the following: 1) to retain the whole of the root (control); 2) to retain 1/3 of the root; 3) to retain 1/10 - 1/15 of the root. Leaves were removed in the case of one half of each variant. The plants were raised in a glass-house at 20°. Investigations have shown that all variants developed a stalk provided the leaves had not been removed (Figs 1, 2). Removal of leaves caused delay in the differentiation of buds even in the case of variant 1. From the results obtained the authors draw the following conclusions: Formation and development of the root system and the differentiation of vernalized buds take place only in the presence of leaves. The root system exercises its effect on the differentiation of buds indirectly by way of the leaves. The leaves guarantee also in the absence of the root system the differentiation and germination of buds. This fact is only possible, however, if sufficient nutritive substance is available in the root (in the presence of about 1/3 of the root).

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The Effect of Leaves and Root System on the Differentiation of Buds and Growth of 2-Year-old Seed Plants SOV/20-124-6-48/55

In spite of the little remaining part of the root, the latter can guarantee the formation of leaves and the vernalization processes; the differentiation of buds takes place only in the presence of leaves and the root system. There are 4 figures and 6 Soviet references.

ASSOCIATION: Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR (Institute of Plant Physiology imeni K. A. Timiryazev of the Academy of Sciences, USSR)

PRESENTED: October 15, 1958, by A. L. Kursanov, Academician

SUBMITTED: October 11, 1958

Card 3/3

KRUZHILIN, Aleksey Stepanovich; GENKEL', P.A., otv.red.; BELIK, V.F., red.izd-va; POLENOVA, T.V., tekhn.red.

[Interaction of stock and scion in plant grafts] Vzaimovliianie privoia i podvoia rastenii. Moskva, Izd-vo Akad.nauk SSSR, 1960. 271 p. (MIRA 13:7)
(Grafting)

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Role of leaves in the vernalization of winter and biennial plants. Fiziol.rast. 7 no.3:287-295 '60. (MIRA 13:6)

1. K.A. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Vernalization) (Leaves)

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Differentiation of growing points in biennial root crops. Fiziol. rast. 7 no.4:435-438 '60. (MIRA 13:9)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Biennials (Plants)) (Morphogenesis)

KRUZHILIN, A.S., prof.; SHVEDSKAYA, Z.M., kand.biologicheskikh nauk

Characteristics of stage development in strawberries.
Agrobiologiia no.4:525-531 Jl-Ag '61. (MIRA 14:7)

1. Institut fiziologii rasteniy AN SSSR.
(Strawberries)

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Conference on the physiology of plant development in Czechoslovakia brief information. Fiziol. rast. 8 no.2:260-261 '61. (MIRA 14:3)
(Plant physiology—Congresses)

SHVEDSKAYA, Z.M.; KRUZHILIN, A.S.

Effect of inhibitors on the vernalization of plants. Fiziol.rast. 8 no.5:613-618 '61. (MIRA 14:10)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Vernalization) (Growth inhibiting substances)

KRUZHILIN, A.S.; SHVEDSKAYA, Z.M.

Characteristics of the phasic development and morphogenesis of common onion. Fiziol.rast. 9 no.4:466-475 '62. (MIRA 15:9)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(ONIONS) (GROWTH (PLANTS))

KRUZHILIN, A.S. [Kruzhilin, A.S.]

Physiological nature of the stage development and blossoming of plants. Analele biol 16 no.5:3-22 S-O '62.

KHUZHILIN, A.S.

Physiological nature of stage development and inflorescence of plants. Bot.zhur. 47 no.3:301-316 Mr '62. (MIRA 15:3)

1. Institut fiziologii rasteniy AN SSSR, Moskva.
(Plants physiology) (Plants, Flowering of)

KRUZHILIN, A. S., GLUSHCHENKO, I. YE., SHVEDSKAYA, Z. M., and SOKOLOVA, L. K.,

"Variability of Anthocyan in Chimera Cabbage Plants."

report submitted for the 11th Intl. Congress of Genetics, The Hague, Netherlands, 2-10 Sep 63

KRUZHILIN, A.S.

Effect of reduced temperatures on sugar accumulation in dual-purpose winter and spring wheat. Fiziol. rast. 10 no.3:374-376 My-Je '63. (MIRA 16:6)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

(Wheat) (Plants—Frost resistance) (Sugars)

KRUZHILIN, A.S.

Symposium on the biology of wheat in Hungary. Fiziol. rast. 10 no.2:258-259 Mr-Ap '63. (MIRA 16:5)

(Wheat)

KRUZHILIN, A.S.

Changeability of physiological properties in plants. Trudy Inst. gen. no.31:89-95 '64. (MIRA 17:9)

KRUZHILIN, A.S.; TUYCHIBAYEV, M.

Role of organs in cotton ontogeny. Uzb. biol. zhur. 8 no.6: 20-25 '64. (MIRA 18:3)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.

SHVEDSKAYA, Z.M.; KRUZHILIN, A.S.

Characteristics of oxidative metabolism and amino acid formation in cabbage buds during vernalization. Fiziol. rast. 11 no.2: 279-286 Mr-Ap '64. (MIRA 17:4)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

KHOLMSKIN, A.S.; SHVEDSKAYA, Z.M.

Vernalization of vegetative buds of fruit plants. Fiziol. rast. 11 no.6:1022-1026 N-D '64. (MIRA 18:2)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

KRUZHILIN, A.S., prof.

Effect of artificial light on plant growth as exemplified by winter wheat. Vest. AN SSSR 34 no.5:93-98 My '64.
(MIRA 17:6)

TUYCHIBAYEV, M.; KRUZHILIN, A.S.

Movement of labeled assimilates from the cotyledons of cotton. Fiziol. rast. 12 no.3:412-415 My-Je '65. (MIRA 18:10)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.

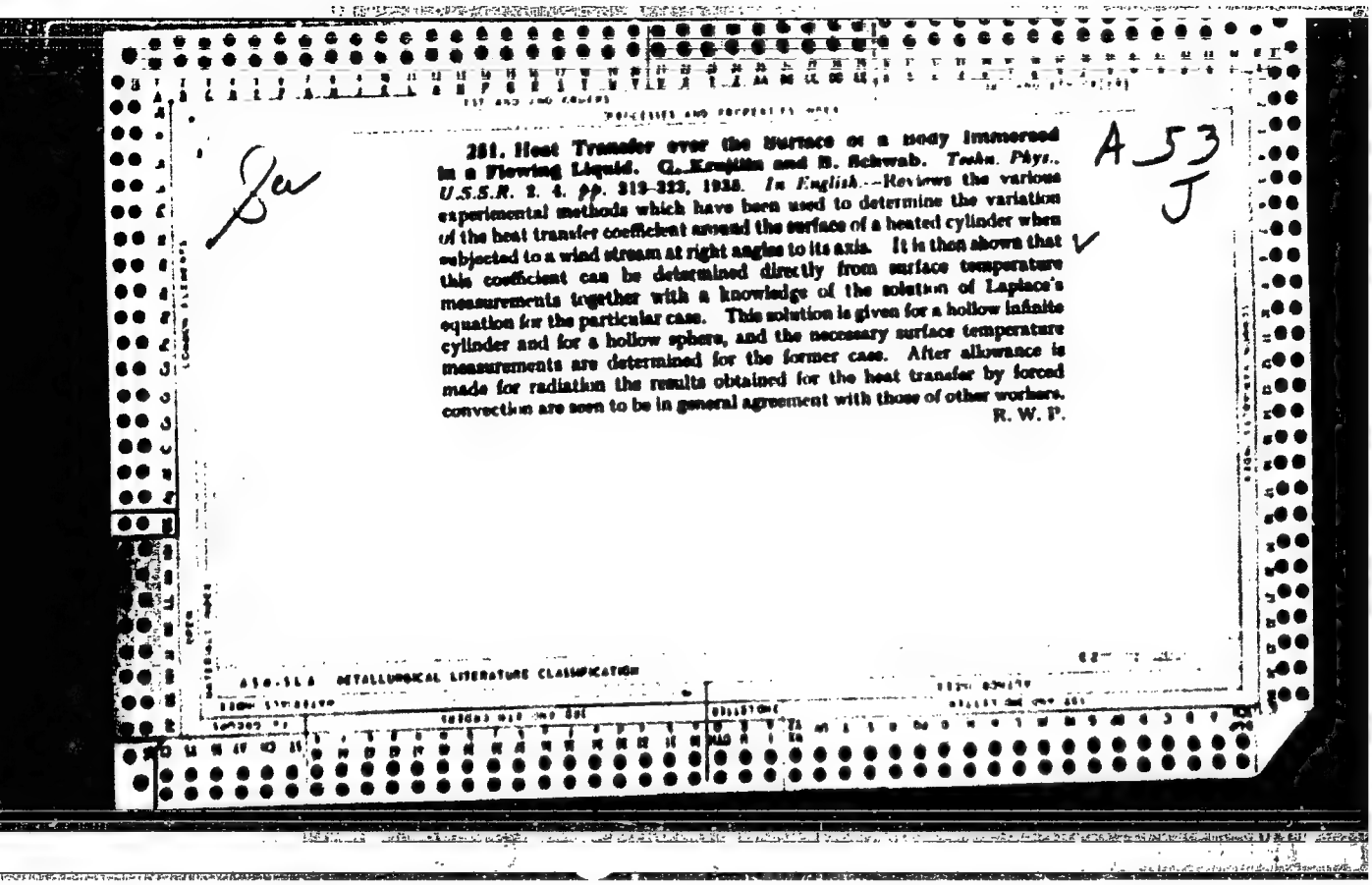
TUYCHIBAYEV, M.; KHUZHILIN, A.S.

Translocation of labelled assimilates from the individual leaves of a cotton plant. Fiziol.rast. 12 no.6:1045-1050 N-D '65. (MIRA 18:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR, Moskva. Submitted June 23, 1964.

KRUZHILIN, B.V.; KARAMYSHEV, S.G.

Unit for the preparation of salt solution. Biul.tekh.-ekon.inform. Gos. nauch.-issl. inst. nauch.i tekh. inform. 18 no.6:12-13 Je '65. (MIRA 18:7)



281. **Heat Transfer over the Surface of a Body Immersed in a Flowing Liquid.** G. Kruglikov and B. Schwab. *Techn. Phys. U.S.S.R.* 2. 4. pp. 313-323, 1935. *In English.*—Reviews the various experimental methods which have been used to determine the variation of the heat transfer coefficient around the surface of a heated cylinder when subjected to a wind stream at right angles to its axis. It is then shown that this coefficient can be determined directly from surface temperature measurements together with a knowledge of the solution of Laplace's equation for the particular case. This solution is given for a hollow infinite cylinder and for a hollow sphere, and the necessary surface temperature measurements are determined for the former case. After allowance is made for radiation the results obtained for the heat transfer by forced convection are seen to be in general agreement with those of other workers.
R. W. P.

A53
J

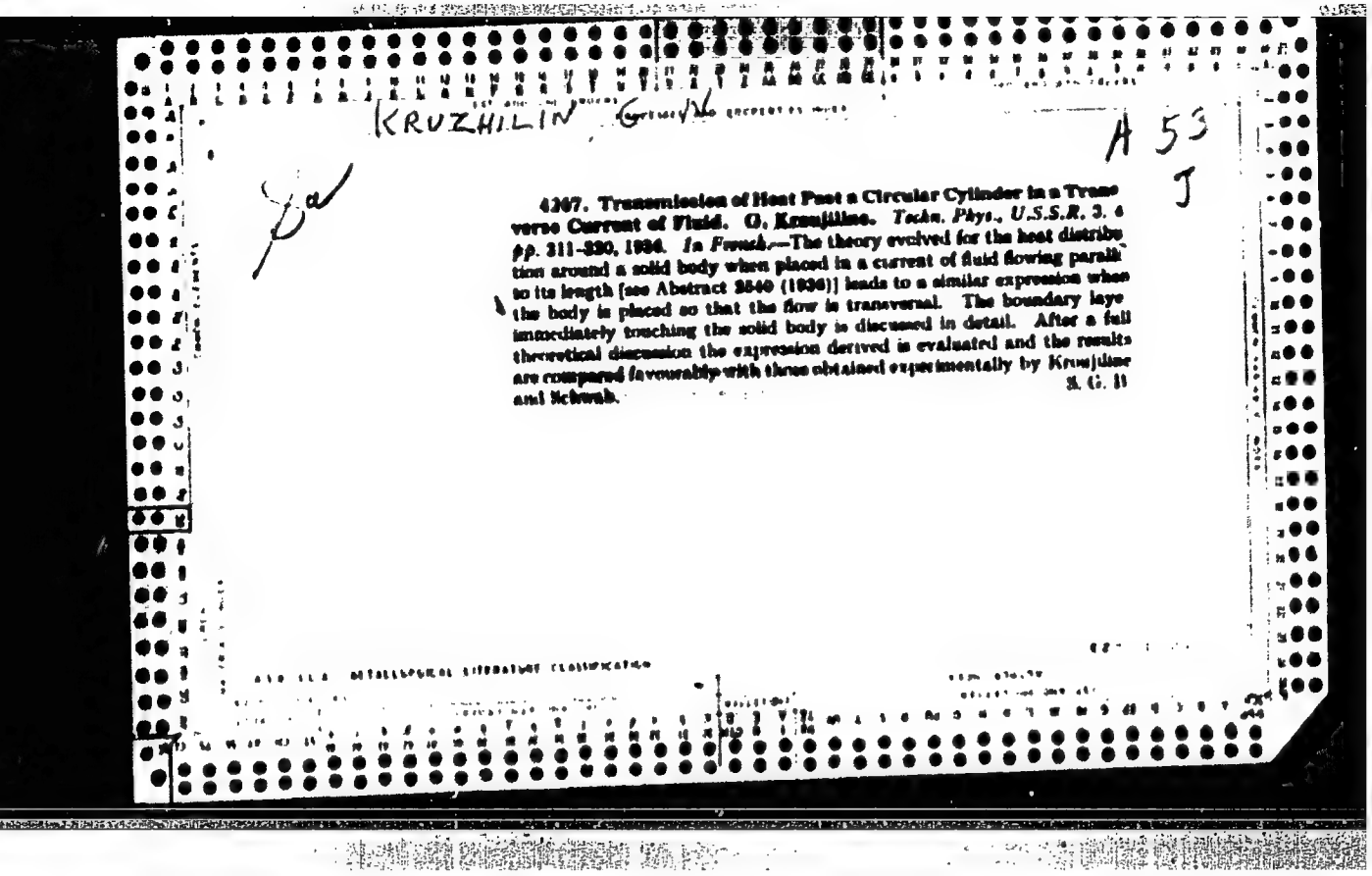
Kazakhi, G.M.

Investigation de la couche - limite thermique. (Technical physics of the USSR, 1936, v. 3, no. 2, p. 183-194, bibliography)

Title tr.: Investigation of the thermal boundary layer.

SO1. Th 1936

SO. Aeronautical Science and Aviation in the Soviet Union. Library of Congress, 1955.



KRUZHILIN

A 53
J

4267. Transmission of Heat Past a Circular Cylinder in a Transverse Current of Fluid. G. Kroujiline. *Techn. Phys., U.S.S.R.* 3, 4 pp. 311-320, 1936. *In French.*—The theory evolved for the heat distribution around a solid body when placed in a current of fluid flowing parallel to its length [see Abstract 2540 (1936)] leads to a similar expression when the body is placed so that the flow is transversal. The boundary layer immediately touching the solid body is discussed in detail. After a full theoretical discussion the expression derived is evaluated and the results are compared favourably with those obtained experimentally by Kroujiline and Schwab. S. G. H

Kolosoff, G.V.

Opredelenie temperatury po erkhnosti natep oprovodnogo tela, pomeshchennogo v potok vesma bystro dvizhushcheisia neszhimaemoi zhidkosti. (Zhurnal tekhnicheskoi fiziki, 1936, v. 4, no. 9, p. 1574-1577)

Title tr.: Determination of temperature of the surface of a body placed in the flow of a rapidly moving non - compressible fluid.

QC1.Z48 1936

SO. Aeronautical Science and Aviation in the Soviet Union. Library of Congress, 1955.

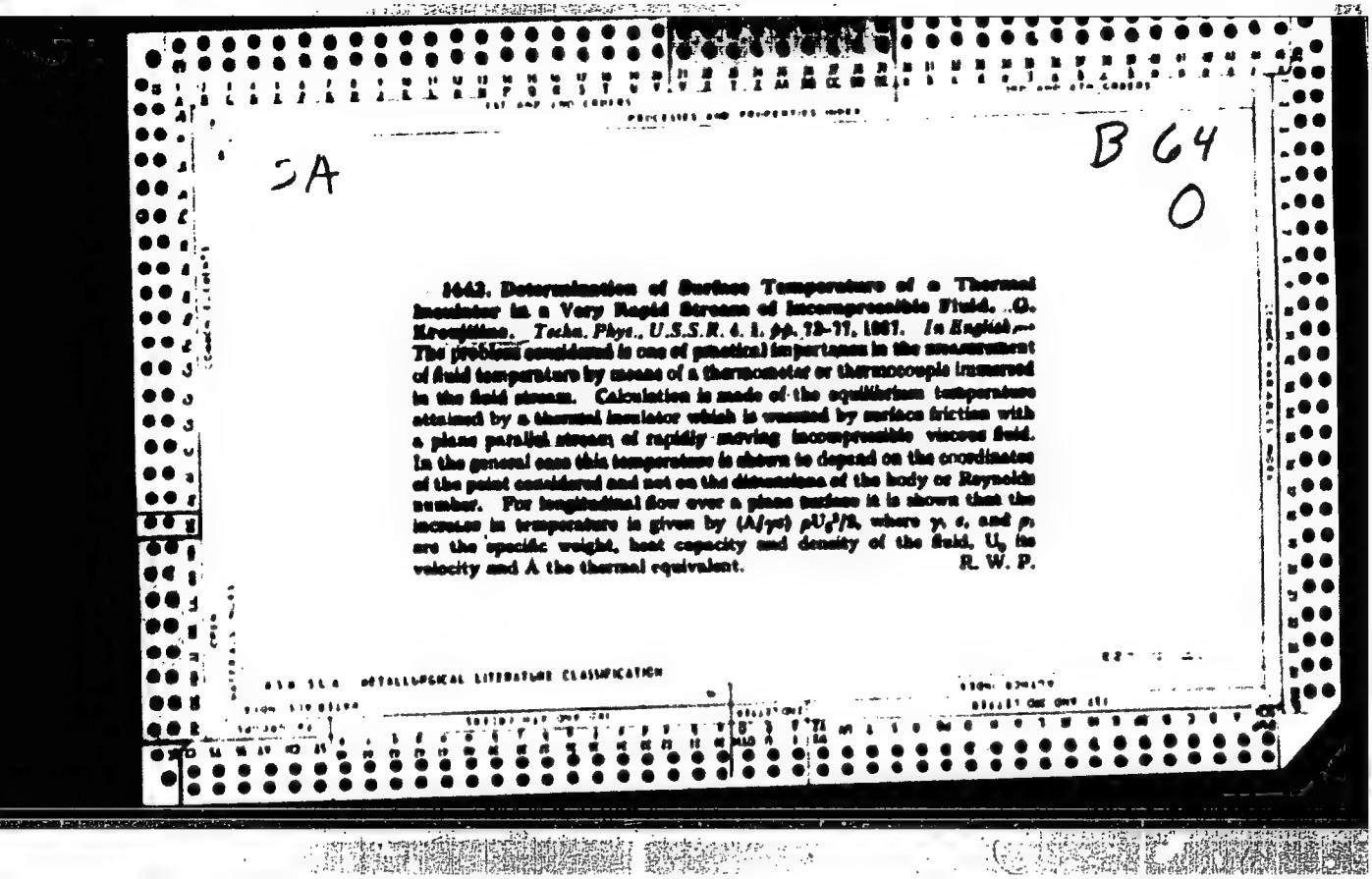
[redacted], G.N.

Teplootdacha tela v potentsial'nom potoke zhidkosti. (Zhurnal t khnicheskoi fiziki, 1936, v. 6, no. 9, p. 1578-1581)

Title tr.: Heat emission of a body in a potential flow of a fluid.

AGl.Chem 1936

30. Aeronautical Science and Aviation in the Soviet Union. Library of Congress, 1955.



5A

B 64
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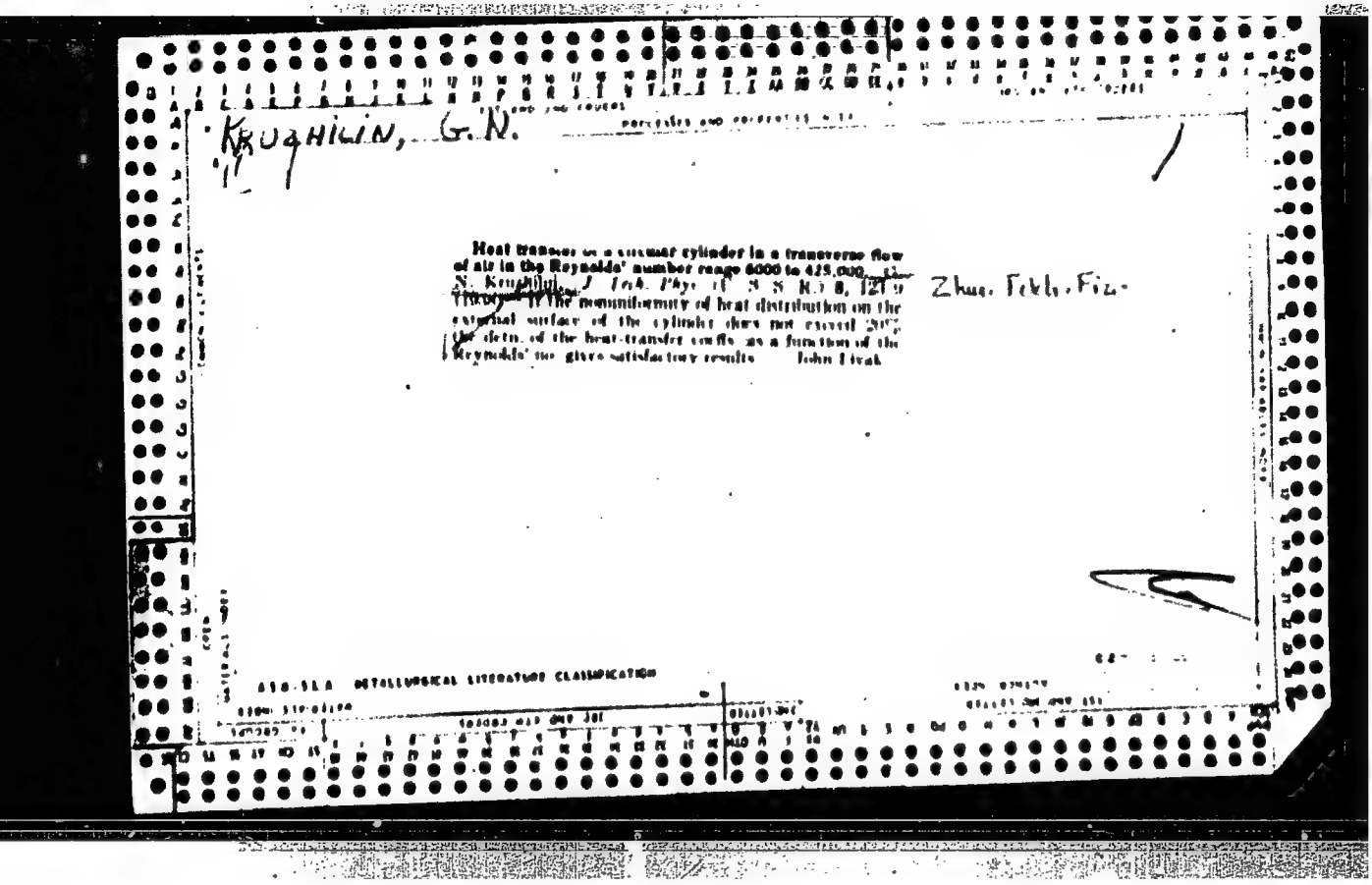
1643. Determination of Surface Temperature of a Thermal Insulator in a Very Rapid Stream of Incompressible Fluid. G. Krenzlikus. *Techn. Phys., U.S.S.R.* 6, 1, pp. 73-77, 1961. *In English.*— The problem considered is one of practical importance in the measurement of fluid temperature by means of a thermometer or thermocouple immersed in the fluid stream. Calculation is made of the equilibrium temperature attained by a thermal insulator which is warmed by surface friction with a plane parallel stream of rapidly moving incompressible viscous fluid. In the general case this temperature is shown to depend on the coordinates of the point considered and not on the dimensions of the body or Reynolds number. For longitudinal flow over a plane surface it is shown that the increase in temperature is given by $(A/\gamma c)\,\rho U_0^2/2$, where γ, c, and ρ are the specific weight, heat capacity and density of the fluid, U_0 the velocity and A the thermal equivalent. R. W. P.

KRUZHILIN, G. N.

Tech. Phy. USSR, Vol. 5, No. 1, pp 59-66, 1938, Extension of the Nusselt Theory of Heat Interchange at Condensation (Sverdlovsk, Heat Transfer Group of the Ural Division of the All Union Thermotechnical Institute of F. E. Dzerjinskiy).

"If the nonuniformity of heat distribution on the external surface of the cylinder does not exceed 20 per cent, the detn. of the heat-transfer coeffs. as a function of the Reynold's no. give stsisfactory results,"



KRUGHILIN, G.N.

Heat transfer on a circular cylinder in a transverse flow of air in the Reynolds' number range 6000 to 425,000. N. Krughilin. J. Tech. Phys. (USSR) 8, 121 (1938). Zhur. Tekh. Fiz.

Theory. If the nonuniformity of heat distribution on the external surface of the cylinder does not exceed 20%, the data of the heat-transfer coeffs. as a function of the Reynolds' no. gives satisfactory results. John Livak

[redacted], S. N.

Zh. Tech. Phys, Vol. 9, No. 6, pp 483-490, 1939 Distribution of Steam in Superheater Tubes (Sverdlovsk Ural'skoe Otdelenie VTI).

"Malafejev established the differential equations of fluid motion in receiving and outlet collectors, and found approximate solutions for the outlet collector or out of the receiving collector. The present paper tackles the problem of the cases of superheaters of the U- and Z-forms with regard to the changes of specific mass of the fluid within the tubes. The calculation assumes the coefficient of general resistance experiments confirm the theory."

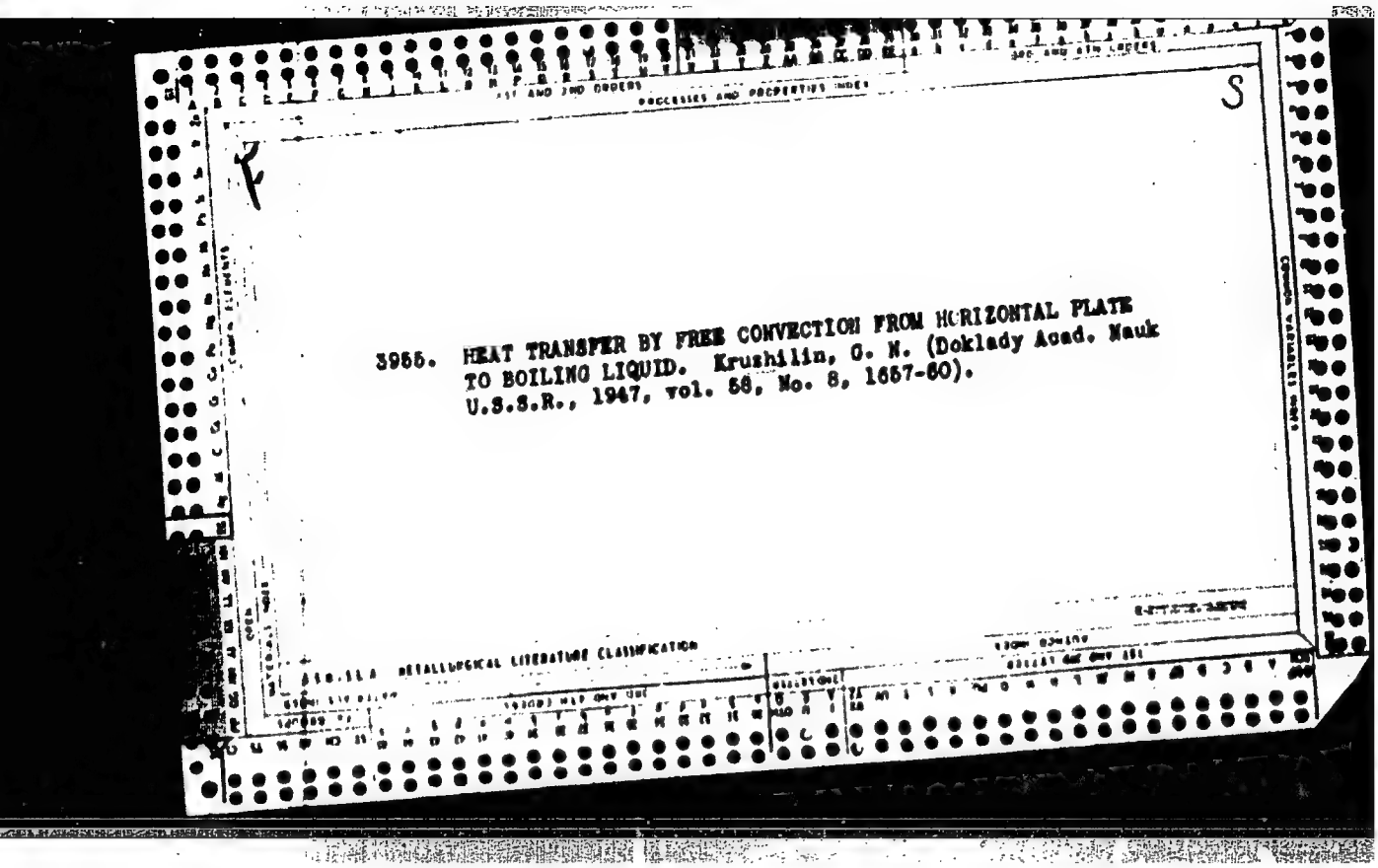
[redacted], S. N.

Sovetskoe Kotloturbostroenie, 1945, No. 1-4, Theory of Carrying-Over and Separation of Mixture in Steam Boilers.

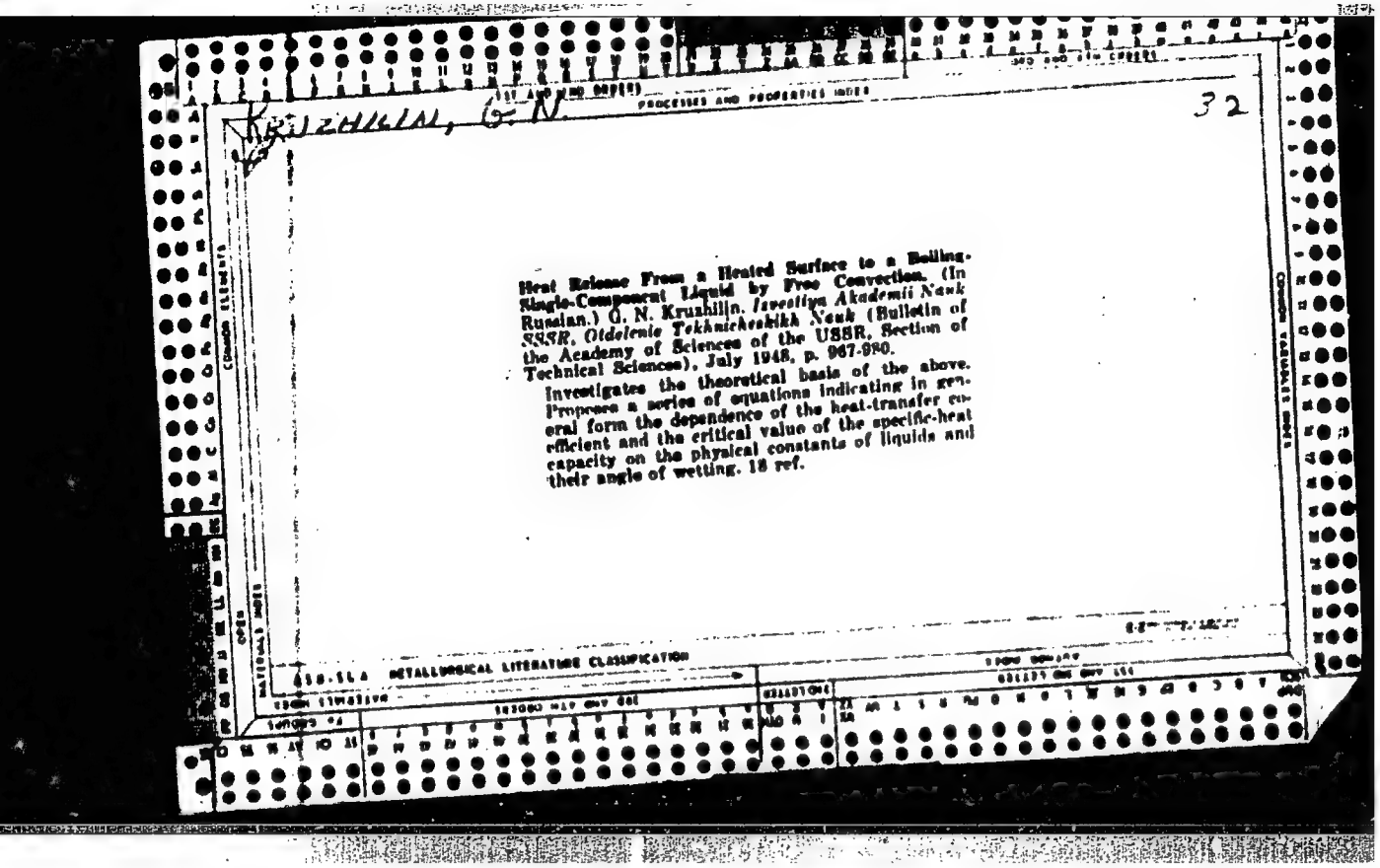
KRUZHILIN, G. N. Dr. Tech. Sci.

Dissertation: "Heat Transfer from the Heating Surface to the Boiling Liquid at Free Convection." Power Engineering Inst., imeni G. M. Krzhizhanovskiy, 29 May 47.

SO: Vechernyaya Moskva, May, 1947 (Project #17836)



3965. HEAT TRANSFER BY FREE CONVECTION FROM HORIZONTAL PLATE TO BOILING LIQUID. Krushilin, G. N. (Doklady Acad. Nauk U.S.S.R., 1947, vol. 58, No. 8, 1657-60).



KRUZHILIN, G. N.

32

Heat Release From a Heated Surface to a Boiling-Single-Component Liquid by Free Convection. (In Russian.) G. N. Kruzhilin. *Izvestiya Akademii Nauk SSSR, Otdelenie Tekhnicheskikh Nauk* (Bulletin of the Academy of Sciences of the USSR, Section of Technical Sciences), July 1948, p. 967-980.

Investigates the theoretical basis of the above. Proposes a series of equations indicating in general form the dependence of the heat-transfer coefficient and the critical value of the specific-heat capacity on the physical constants of liquids and their angle of wetting. 18 ref.

KRUZHILIN, G.N.

3.2

.General Integral Relationship as Applied to the Thermal Boundary Layer and Its Application to the Calculation of Heat Exchange. (In Russian.) I. I. Kudryashev. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 63, Nov. 1, 1948, p. 23-26.

D.A.N. SSSR

Introduces concept of thermal boundary layer analogous to the hydrodynamic boundary layer of G. N. Kruzhilin. Shows how to derive a general integral relationship for such a layer of finite thickness, thus making it possible to solve the heat-exchange problem for the general case.

KRUZHILIN, G. N.

PA 51/49T60

USSR/Physics May 49
Fluid Mechanics
Heat Exchange

"Generalization of Experimental Data on Heat Exchange During Boiling of Liquids Under Free Convection Conditions," G. N. Kruzhilin, Power Eng Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR, 12 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 5

Results of generalizing previously obtained data ("Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk," No 7, 1948) on heat exchange in boiling various one-component liquids under free

[redacted] 51/49T60

USSR/Physics (Contd) May 49

convection. Generalization was made on basis of reduced equations obtained in analysis of the problem by similarity method. Submitted by Acad M. V. Kirpichev, 27 Jul 48.

[redacted] 51/49T60

KRUZHILIN, G. N.

Iz. Ak. Nauk. SSSR, Otdel. Tech. Nauk, No. 7 pp 1106-1115, 1951, Rules of the Carrying-Over of the Drop Moisture by Steam in Boilers.

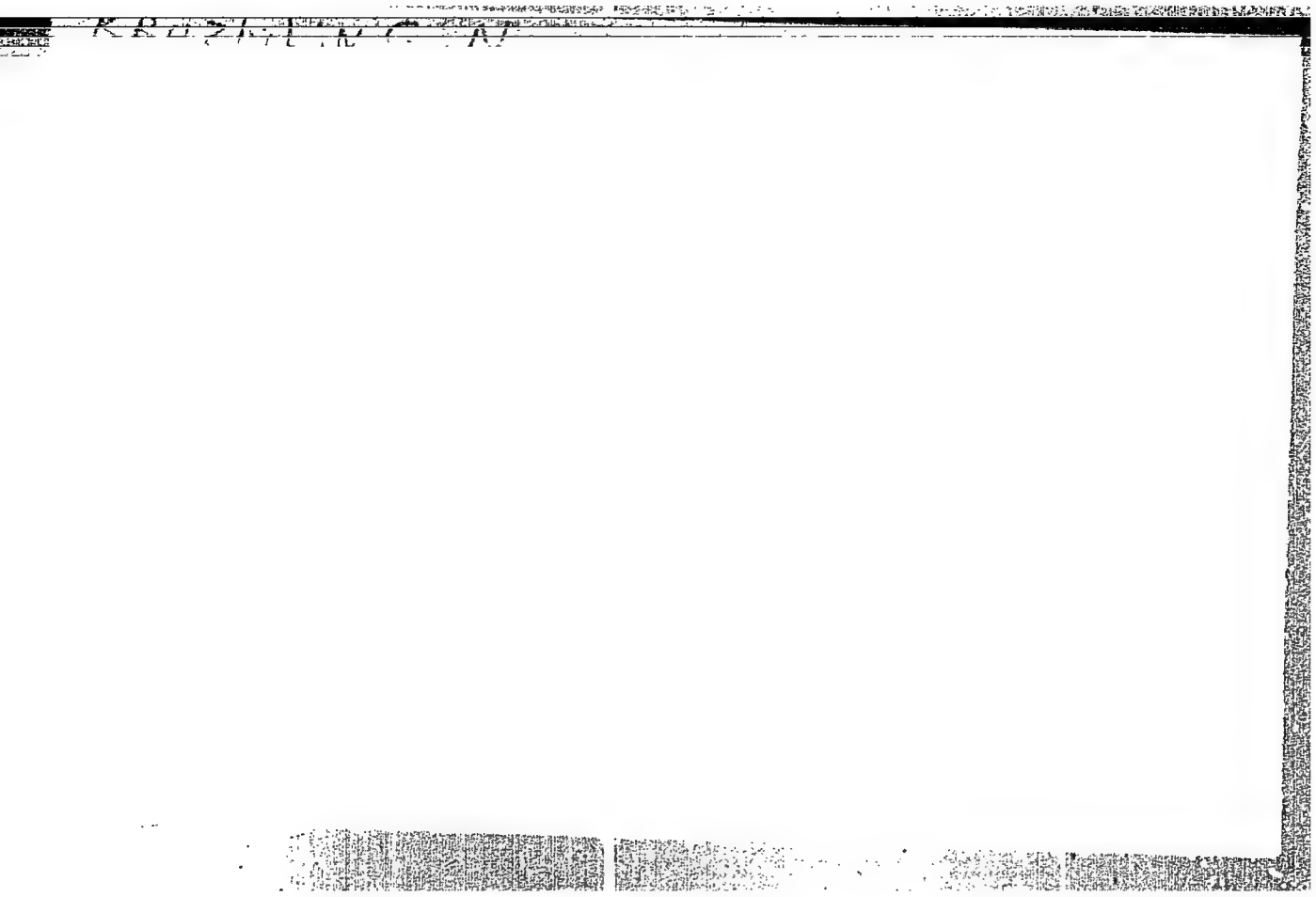
[redacted], G. M.

Iz. Ak. Nauk SSSR, Otdel Tech. Nauk., 1951 No. 10 pp 1560-1566, Observations on the Article of M. A. Styrikovich, L. S. Sterman, and T. Kh. Margulova.

KRUZHILIN, G.N., inzh.

[Reactor for physical and technological studies] Reaktor dlia fizicheskikh i tekhnicheskikh issledovanii. Moskva, 1955. 43 p. (MIRA 14:7)

1. Chlen-korrespondent AN SSSR.
(Nuclear reactors)



MIKHEYEV, Mikhail Aleksandrovich, akademik; KRUZHILIN, G.N., retsenzent; SKVORTSOV, S.A., redaktor; LARIONOV, G.Ye. tekhnicheskiy redaktor

[Principles of heat transmission] Osnovy teploperedachi. Izd. 3-e, perer. Moskva, Gos. energ. izd-vo, 1956. 392 p. (MLRA 9:8)

1. Chlen-korrespondent AN SSSR (for Krushilin).
(Heat--Transmission)

KRUZHILIN, G.N.

Problems and prospects in atomic engineering. Priroda 45 no.11: 7-18 N '56. (MLRA 9:11)

1. Chlen-korrespondent Akademii nauk SSSR.
(Atomic power industry)

KRUZHILIN, Georgiy Nikitovich (Prof.)

"Heat Removal in Light Water Cooled and Moderated Reactors,"
a paper to be presented at the 1958 UN "Atoms-for-Peace" Conference.).

24(5) PHASE I BOOK EXPLOITATION SOV/1826

Akademiya nauk SSSR. Energeticheskiy institut

Teploperedacha i teplovoye modelirovaniye (Heat Transfer and Modeling of Heat Processes) Moscow, Izd-vo AN SSSR, 1959. 419 p. Errata slip inserted. 3,500 copies printed.

Resp. Ed.: M. A. Mikheyev, Academician; Ed. of Publishing House: D. A. Ivanova; Tech. Ed.: G. M. Shevchenko.

PURPOSE: The book is intended for scientists concerned with heat transfer, heat emission, and hydraulics of liquid metals, etc.

COVERAGE: This collection is dedicated to the memory of Academician M. V. Kirpichev who in the twenties initiated a systematic investigation of heat transfer processes and the efficiency of heat apparatus. Later he led the development of research work in this field. Two special collections devoted to works of Kirpichev's school have been published, one in 1938, Materialy issledovaniya po modelirovaniyu (Materials of the Conference on Modeling) and in 1951, Teoriya podobiya i modelirovaniye (Theory of Similitude and Modeling). The present collection prepared in 1956 represents further development of the work of this school. This theory is fundamental for the analysis of many heat problems in the field of electrical and radio engineering. Of great importance are the first systematic investigations of heat transfer and the hydraulics of liquid metals which as a new kind of heat carrier may be used in the various branches of modern engineering. As a result of special investigations of some cases of convective heat transfer, a dependence of the process on the kind of liquid, temperature, pressure, direction of the heat flow, and other factors, was discovered and established. On the basis of a wide generalization of experimental data, new dependable recommendations for heat analysis of engineering equipment were developed. Of no less interest is the work on heat transmission in boiling liquids and the condensation of vapors. All investigations are based on the theory of similitude, the nature of which, according to M. V. Kirpichev, is that of "experimentation." Work on the theory of a regular regime applied to a system of bodies with an internal source of heat is of interest for the future.

Card 2/20

Nikhamkin, I. M. Heat Transfer in Free Motion of Various Fluids 226
This article is concerned with the process and mechanics of heat transfer as related to the physical properties of fluids and to the temperature, temperature pressure, and direction of heat flow. A horizontal pipe of 30mm. diameter and working media of air, water, and two kinds of converter oil were chosen for investigation. There are 11 references: 7 Soviet, 1 English, and 3 German.

Aerin, Ye. K., and G. M. Kruzilin. Heat Transfer in Boiling Water in Forced Circulation 239
It is stated that in one type of future atomic reactor, boiling water will be used for cooling heat-producing elements. The practical application of this principle is difficult and has its limitations. In this connection tests were made in order to determine the admissible (critical) heat loads in the flow of boiling water in slit conduits. The method is described and results of tests and tables of values are given. There are 5 references: 4 Soviet and 1 English.

Card 14/20

KRUZHILIN, G.N.

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.P. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

S/030/61/000/008/003/005
B105/B206

AUTHORS: Baum, V. A., Kruzhilin, G. N.

TITLE: Solar radiation as a future source of energy

PERIODICAL: Akademiya nauk SSSR. Vestnik, no 8, 1961, 64-70

TEXT: The authors discuss technical and economic problems of the utilization of solar energy. The prospects and necessity of utilizing solar energy can be evaluated by studying the existing sources of energy, which is done on the basis of a compilation of data on the power sources of the earth. Calculations show that if energy consumption continues to increase at the present rate, coal deposits will be exhausted within 70 to 150 years, and gas and oil deposits within 25 to 50 years. Man must utilize new sources of energy in the near future. Figures show the immense, inexhaustible energy flow of solar radiation which exceeds ten thousand times the amount of energy consumed in the whole world. In the course of one year the earth receives more energy from the sun than all other known energy deposits amount to. More than half of this energy reaches the surface of the earth. The conversion of thermal into electric

Card 1/3

Solar radiation as a future source....

energy by means of thermoelectric batteries was practically impossible 20 years ago, since the efficiency of the individual metal thermocouples amounted only to fractions of one percent. Owing to studies by A. F. Ioffe and his students, semiconductor thermocouples with an efficiency of 9-10 % are now produced in the USSR. The solar thermoelectric generators of the type СТЭГ (STEG), which have an efficiency of about 5-8 %, are mentioned in this connection. At the Energeticheskiy institut im. G. M. Krzhizhanovskogo (Power Engineering Institute imeni G. M. Krzhizhanovskiy) a calculation method for such devices was elaborated, and the first STEG with an output of 40 w was produced. Solar photoelectric cells could be produced, which convert solar energy directly into electric energy with an efficiency of about 10-11 %. Photoelectric cells developed at the Fizicheskiy institut im. P. N. Lebedeva (Institute of Physics imeni P. N. Lebedev) can operate at almost natural light. Owing to high cost, however, they can only be used in special cases. The development and application of "selective" coatings is described as being important. Dimensions and fields of application of solar installations are also discussed. Solar stoves and solar boilers for domestic use are mentioned, which were already developed and tested. In order to define possibilities

Card 2/3

S/030/61/000/008/003/005
B105/B206

Solar radiation as a future source...

and prospects, an experimental station must be established for the purpose of solving some theoretical and design problems. A project of such a station with a 2500-kw output, elaborated by the Power Engineering Institute, is to be realized in one of the rayons of the Armyanskaya SSR. In some cases the application of solar batteries is determined, not by economic, but by other requirements, e.g., the utilization of solar energy when solving cosmic problems, its application in high-temperature solar furnaces and so forth.

Card 3/3

PETROV, B.N.; SOTSKOV, B.S.; LARIONOV, A.N.; CHILIKIN, M.G.; SYROMYATNIKOV, I.A.; BLAGONRAVOV, A.A.; KRUZHILIN, G.N.; IVAKHNENKO, A.G.; NAGORSKIY, V.D.; CHELYUSTKIN, A.B.; DROZDOV, N.G.; PETROV, I.I.

Seventieth birthday of Viktor Sergeevich Kulebakin. Elektrichestvo no.10:90-91 O '61. (MIRA 14:10)
(Kulebakin, Viktor Sergeevich, 1891-)

YEGOROV, K.D., kand. ekon. nauk; ALEKSANDROVA-ZAORSKAYA, V.V., doktor ekon. nauk, prof.; STEPANOV, P.N., doktor geogr. nauk, prof.; KULEBAKIN, V.S., akademik, red.; KRUZHILIN, G.N., red.; FEDOROV, A.G., red.; KYBINSKIY, M.I., red.; CHASHNIKOVA, M.V., red.

[Materials on the electrification of individual districts] Materialy po elektrifikatsii otdel'nykh raionov; trudy. Moskva, Izd-vo "Nauka," 1964. 299 p. (MIRA 17:4)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennaya komissiya po elektrifikatsii Rossii. 2. Chlen-korrespondent AN SSSR (for Kruzhilin).

BOYKO, L.D., kand. tekhn. nauk; KRUZHILIN, G.N.

Conditions of heat transmission during the condensation of steam in parallel connected pipe clusters. Teploenergetika 12 no.5:63-67 My '65. (MIRA 18:5)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo. 2. Chlen-korrespondent AN SSSR (for Kruzhilin).

11548-66 EWT(d)/EWP(k)/EWP(1) JT

ACC NR: AP6005028 SOURCE CODE: UR/0105/65/000/001/0091/0091

AUTHOR: Ayvaz'yan, V. G.; Aleksandrov, B. K.; Andrianov, V. N.; Beschinskiy, A. A.; Budzko, I. A.; Zhimerin, D. G.; Krasnov, V. S.; Kruzhilin, G. N.; Kulebakin, V. S.; Listov, P. N.; Markvardt, K. G.; Markovich, I. M.; Popkov, V. I.; Styrikovich, M. A.

ORG: none

TITLE: Professor Andrey Georgiyevich Zakharin

SOURCE: Elektrichestvo, no. 1, 1965, 91

TOPIC TAGS: electric power engineering, electric engineering personnel

ABSTRACT: A short biography of subject on the occasion of his 60th birthday in November 64. A close disciple of Krzhizhanovskiy, he now heads sector of general methodological problems and forecasting at ENIN (Institute of Power Engineering imeni Krzhizhanovskiy), and power engineering section within its scientific council. In 1927-1932, worked in designing and construction of power stations and industrial power installations in the Trans-Caucasus. In 1932, having graduated as electrical engineer from Tbilisi Polytechnical Institute, he switched to scientific work at All-Union Institute of Farm Electrification, and at ENIN since 1944. Became candidate of technical sciences in 1937; doctor, in 1948. Subject is credited with working out the methods for designing efficient and economical regional and local power systems, utilizing local power resources and coordinating them with the power grids. He participated in studies on electrification through 1980, and on

UDC: 621.31:(0,75.5)

Card 1/2

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ACC NR: AP6005028 2

the application of mathematical methods to solution of problems concerning fuel-power balance. In recent years, he has been concerned with linear programming, and long-term prediction with computer techniques. He authored about 80 scientific works, including monographs, textbooks and handbooks, and has been editing all ENIM publications. Is active in CEMA commissions and GOSPLAN USSR, devoting special attention to coordination of scientific research in power engineering. Has been awarded the Order of the Badge of Merit and other decorations. Orig. art. has: 1 figure.
[JPRS] 14

SUB CODE: 09 / SUBM DATE: none

HW
Card 2/2

ACC NR: AP6034276 (N) SOURCE CODE: UR/0281/66/000/005/0113/0128

AUTHOR: Boyko, L. D. (Moscow); Kruzhilin, G. N. (Moscow)

ORG: None

TITLE: Heat transfer during condensation of steam in tubes

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 5, 1966, 113-128

TOPIC TAGS: heat transfer, vapor condensation, Reynolds number, fluid friction

ABSTRACT: The authors present an approximate theoretical calculation for heat transfer during steam condensation in tubes based on the analogy between hydraulic drag and Reynolds heat exchange. The work of other authors on this problem is discussed. Experimental data are presented which were obtained during condensation of steam in tubes up to 18 mm in diameter and 12 m long at 90 bars. The theoretical and experimental data are in agreement with respect to heat exchange for the cases cited. Orig. art. has: 3 figures, 59 formulas.

SUB CODE: 20/ SUBM DATE: 11Feb66/ ORIG REF: 006/ OTH REF: 009

Card 1/1

UDC: 536.242;536.423.4

KRUZHILIN, I.P.

Growing sunflowers on irrigated lands in Rostov Province. (MIRA 15:4)
Zemledelie 24 no.4:40-45 Ap '62.

1. Persianovskaya opytno-meliorativnaya stantsiya pri Novocherkasskom inzhenerno-meliorativnom institute.
(Rostov Province--Sunflowers) (Irrigation farming)

YENIKEYEV, Kh.M.; KOZLOV, D.N.; KRUZHILIN, M.P.; MEZHUYEV, B.N.; NALCHAN, A.G.; NIKULIN, A.I.; PANKIN, V.A.; SHAVIN, G.F.; LESNICHENKO, I.I., red. izd-va; SMIRNOVA, G.V., tekhn. red.

[Metal-cutting machines; kinematic adjustment of metal-cutting machines] Metallorezhushchie stanki; kinematicheskaia nastroika metallorezhushchikh stankov. Pod red. A.G.Nalchana. Moskva, Mashgiz, 1962. 179 p. (MIRA 16:2)

1. Moscow. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut. Kafedra "Metallorezhushchie stanki i instrumenty." 2. Prepodavateli kafedry "Metallorezhushchiye stanki i instrumenty" Vsesoyuznogo Zaochnogo Mashinostroitel'nogo instituta (for all except Lesnichenko, Smirnova).
(Metal cutting) (Machinery, Kinematics of)

DOBAK, L.L.; KAZ'MIN, V.I.; MIKHEEV, M.M.; KRUMLIN, S.M., red.

[Short Russian-French dictionary of terms in descriptive geomet., and drawing] Kratkii russko-frantsuzskii slovar' terminov po nachertatel'noi geometrii i cherchen'iu. Moskva, 1963. 33 p. (MIRA 17:9)

1. Moscow. Universitet druzhby narodov. Kafedra nachertatel'noy geometrii i chercheniya.

KOROL'KOV, V.I.; MIKHNEV, N.M.; RODRIGES, M.; KRUZHILIN, S.M., red.

[Short Russian-Spanish dictionary of terms in descriptive geometry and drawing] Kratkii russko-ispanskii slovar' terminov po nachertatel'noi geometrii i cherchenilu. Moskva, 1963. 32 p. (MIRA 17:7)

1. Moscow. Universitet druzhby narodov. Kafedra nachertatel'noi geometrii i cherchenila.

KOKOL'KOV, V.I.; MIKHEEV, M.N.; TOKAREVA, Ye.V.; KRUZHILIN, S.M., red.

[Short Russian-English dictionary of terms in descriptive geometry and drawing] Kratkii russko-angliiskii slovar' terminov po nachertatel'noi geometrii i cherchen'iu. Moskva, 1963. 31 p. (MIRA 17:8)

1. Moscow. Universitet druzhby narodov. Kafedra nachertatel'noy geometrii i chercheniya.

SAMTSOVA, Ye.N.; KRUZHILIN, S.M., red.; VINOGRADOVA, V.A., tekhn. red.

[Short Russian-Spanish dictionary of arithmetical terms] Kratkii russko-ispanskii slovar' arifmeticheskikh terminov. Moskva, 1963. 9 p. (MIRA 17:4)

[Short Russian-English dictionary of arithmetical terms] Kratkii russko-angliiskii slovar arifmeticheskikh terminov. Moskva, 1963. 9 p. (MIRA 17:4)

[Short Russian-French dictionary of arithmetical terms] Kratkii russko-frantsuzskii slovar' arifmeticheskikh terminov. Moskva, 1963. 9 p. (MIRA 17:4)

1. Moscow. Universitet druzhby narodov imeni Patrisa Lumumby. Kafedra algebry i geometrii.

ACC NR: AP7004141 SOURCE CODE: UR/0051/67/022/001/0115/0118

AUTHOR: Kruzhilin, Yu. I.

ORG: none

TITLE: Polarization of the output emission of a neodymium-glass laser

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 115-118

TOPIC TAGS: solid state laser, neodymium glass laser, laser emission, light polarization, laser cavity

ABSTRACT: The plane of polarization of the emission from a neodymium-glass laser was determined with an analyzer consisting of plane-parallel plates so installed at the Brewster angle to the laser beam that the planes of incidence on the first and second plates are mutually perpendicular. The angle is determined from the ratio of the intensities of the light reflected by the two plates, as determined from the sensitivity ratio of the photocell used for the light measurement (type F5). Three different types of lasers were used in the measurements: with an isotropic cavity made up by two dielectric mirrors with a cavity containing a plane-parallel plate between the mirrors, and with a cavity with an anisotropic prism reflector in lieu of one of the mirrors. The results show that the statistical distribution function of the plane of polarization becomes narrower and more peaked in succession for the foregoing three lasers. Consequently, introduction of artificial anisotropy into the laser resonator exerts a stabilizing influence on the plane of polarization of output

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UDC: 621.375.9: 535-4

ACC NR: AP7004141

radiation, the degree of stabilization depending on the degree of anisotropy. The author thanks Yu. I. Koloskov for help with the work. Orig. art. has: 4 figures and 11 formulas.

[WA-14] [02]

SUB CODE: 20/ SUBM DATE: 23Aug65/ ORIG REF: 001/ OTH REF: 001

Card 2/2

L 28375-66 EEC(k)-2/EWA(h)/EWP(k)/EWT(l)/FBD/T IJP(c) WG

ACC NR: AP6013029 SOURCE CODE: UR/0051/66/020/004/0713/0715

AUTHOR: Kruzhilin, Yu. I.

ORG: none

TITLE: Anisotropic reflector for a laser

SOURCE: Optika i spektroskopiya, v. 20, no. 4, 1966, 713-715

TOPIC TAGS: laser, laser beam, laser optics, reflection coefficient, refractive index, light polarization

ABSTRACT: The author describes an internal-reflector prism for use as an end reflector for a laser, so constructed that the channeling of the outgoing beam is effected not by means of a small gap, the dimensions of which must be kept accurate to very high tolerances, but by using a second prism, which is rotated slightly relative to the first away from the exact total-internal-reflection position (Fig. 1). The use of the second prism results in an output beam which is easier to use, and reduces by 50% the loss of the output energy (by eliminating radiation in two different directions). In addition, the air gap formed by the surfaces of the prisms is equivalent to a plane-parallel plate whose reflection coefficient is larger than that of reflection from one surface. This improves the smoothness of the adjustment of the reflection coefficient. The reflection coefficients of such a system are determined with the aid of the Fresnel formulas as functions of the angle of incidence and of the refractive index of the prism. Plots of these reflection coefficients at the Brewster angle are presented. It is concluded that the strong dependence of the re-

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UDC: 621.375.9: 535

L 28375-66

ACC NR: AP6013029

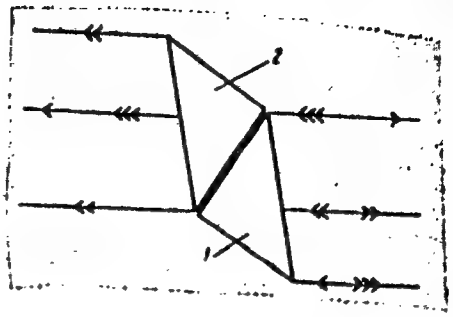


Fig. 1. Diagram of reflector.
1 - Working prism, 2 - compensating prism
2 - compensating prism

flection coefficient on the position of the polarization plane indicates that a polarized laser output can be obtained even if the active medium and its excitation are isotropic. Large refractive indices (heavy glass) favor such a possibility. Such a reflector may also be useful as a rapid mechanical Q-switching shutter. Orig. art. has: 4 figures and 3 formulas. [02]

SUB CODE: 20/ SUBM DATE: 26Nov64/ OTH REF: 003/ ATD PRESS: 4262

Card 2/2

L 20719-66
ACC NR:

EEC(k)-2/EWA(h)/EWP(k)/EWT(1)/EWT(m)/FBD/T/EWP(e) IJP(c) WH/WG
AP6007828 SOURCE CODE: UR/0120/66/000/001/0154/0156

AUTHOR: Kruzhilin, Yu. I.

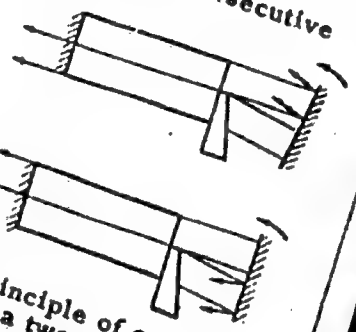
ORG: none

TITLE: Optical quantum generator with ordered pulse sequence

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 154-156

TOPIC TAGS: laser, laser modulation

ABSTRACT: A new mechanically-switched-Q laser producing 2 or 3 consecutive pulses with an adjustable time interval between them is described. An optical wedge (see figure) dividing the laser resonator into two halves is introduced. Hence, both halves are excited at different time moments. With the reflector rotating at a suitable speed, each half yields a pulse at the output with the interval between them: $\tau = \sigma(n-1)\cos\varphi/\omega$, where σ is the wedge angle, n is the refractive index of the wedge, φ is the angle between the wedge and the axis of rotation of the reflector, ω is the angular velocity of reflector rotation. An experimental model of such a laser with a 240-mm long and 11-mm



Principle of operation of a two-pulse laser

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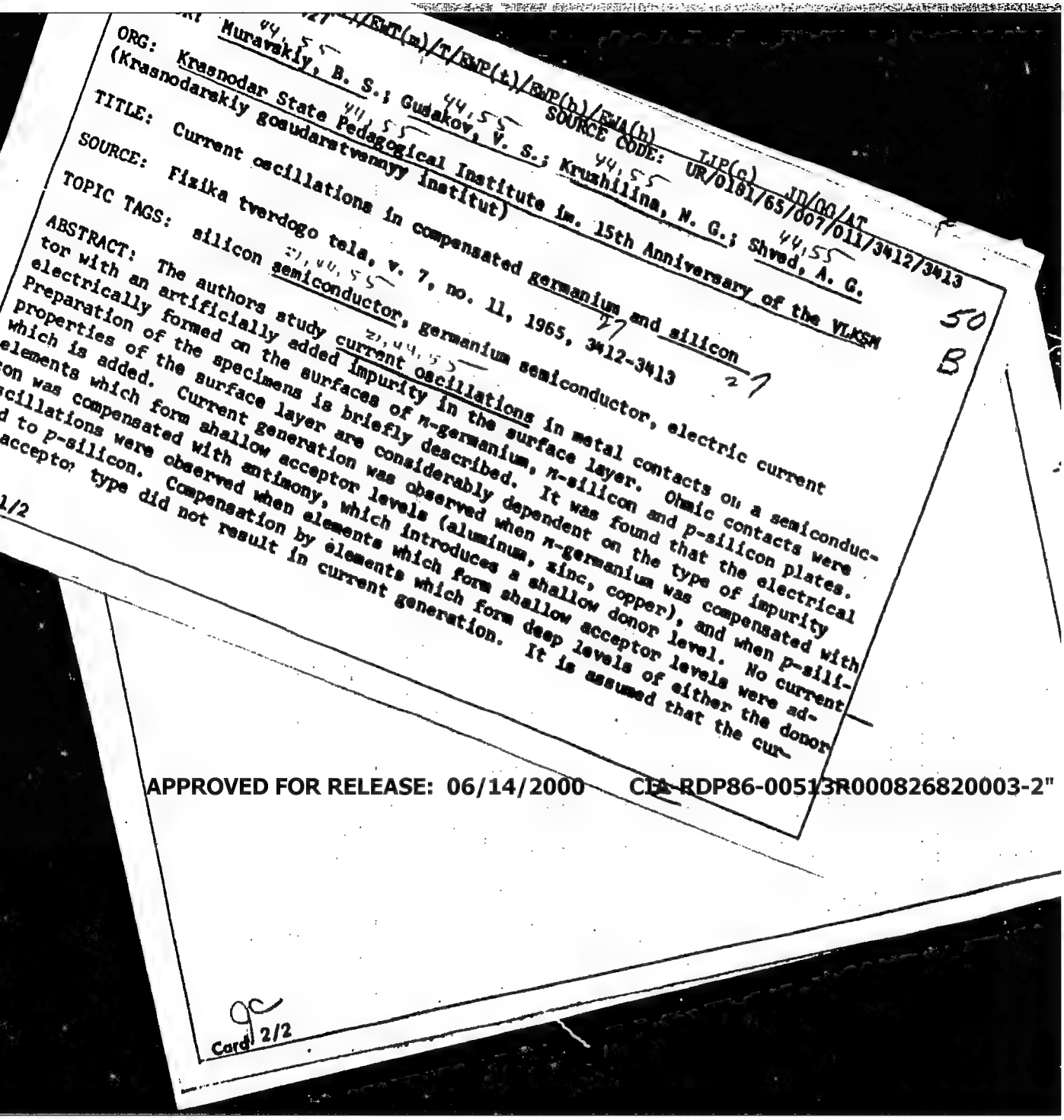
ACC NR: AP6007828

diameter glass-neodymium bar exhibited these characteristics: reflection factor of the fixed mirror, 50% for a 1.065-micron wavelength; prism rotation speed, 30000 rpm; pulse power, 1.5—2 Mw, duration, 100—150 nsec; pulse interval, 0.2—6 microsec; interval instability (at 0.8 microsec), ± 5%. A variant with 3 successive pulses is briefly outlined. Orig. art. has: 3 figures and 2 formulas. [03]

SUB CODE: 09 / SUBM DATE: 09Jan65 / ORIG REF: 000 / OTH REF: 001
ATD PRESS: 4223

Card 2/2



EWT(m)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/GO/AT
SOURCE CODE: UR/0181/65/007/011/3412/3413

AUTHOR: Muravskiy, B. S.; Gudakov, V. S.; Kruzhilina, N. G.; Shved, A. G.

ORG: Krasnodar State Pedagogical Institute im. 15th Anniversary of the VLKSM (Krasnodarskiy gosudarstvennyy institut)

TITLE: Current oscillations in compensated germanium and silicon

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3412-3413

TOPIC TAGS: silicon semiconductor, germanium semiconductor, electric current

ABSTRACT: The authors study current oscillations in metal contacts on a semiconductor with an artificially added impurity in the surface layer. Ohmic contacts were electrically formed on the surfaces of *n*-germanium, *n*-silicon and *p*-silicon plates. Preparation of the specimens is briefly described. It was found that the electrical properties of the surface layer are considerably dependent on the type of impurity which is added. Current generation was observed when *n*-germanium was compensated with elements which form shallow acceptor levels (aluminum, zinc, copper), and when *p*-silicon was compensated with antimony, which introduces a shallow donor level. No current oscillations were observed when elements which form shallow acceptor levels were added to *p*-silicon. Compensation by elements which form deep levels of either the donor or acceptor type did not result in current generation. It is assumed that the cur-

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ACC NR: AP5027427

rent generation is due to charge transfer between the surface impurity centers.

SUB CODE: 20/ SUBM DATE: 17May65/ ORIG REF: 004/ OTH REF: 000

Card 2/2

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KRUZHILINA, V. I. : "The effect of operations on the organs of the abdominal region on certain hemodynamic indexes in patients with hypertonic disease." First Moscow Order of Lenin Medical Inst imeni I. M. Sechenov. Moscow, 1956. (Dissertation for the Degree of Candidate in Medical Science.)

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2109. HAEMODYNAMIC CHANGES DURING AND AFTER THE OPERATION IN PATIENTS WITH HYPERTONIC DISEASE (Russian text) - Krujilina V.I. - KHIRURGIIA 1957, 5 (131-137) Graphs 2

ECG studies of the heart and oscillography of the peripheral vessels were performed in 100 patients with hypertension and in 50 patients with normal blood pressure (control group). The tests were conducted before, during and after operation, in order to show what haemodynamic changes, if any, occur. The results obtained during operation in patients in the first stage of hypertension and in those in the control group are uniform, whereas the patients in the II and III stage of hypertension show a distinct fluctuation of the vascular tone, with a tendency to its lowering and to the development of collapse, especially in emergency operations combined with considerable peritoneal trauma. Zakryś - Lublin

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Production costs in the baking industry and means for their reduction. Trudy MTIPP no.7:232-243 '57. (MIRA 10:12)
(Bakers and bakeries--Costs)

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[National economy of Tyumen' Province; a statistical abstract] Narodnoe khoziaistvo Tiumenskoi oblasti; statisticheskii sbornik. Tiumen', Statistika, 1964. 252 p. (MIRA 18:8)

1. Tyumen' (Province) Statisticheskoye upravleniye.
2. Nachal'nik statisticheskogo upravleniya.

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(Oscillograph)

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USSR / Radiophysics. Radio Measurements. I-7

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12590

Author : Kruzhkov, N.

Inst : Not given

Title : Universal Measuring Instrument.

Orig Pub : Radio, 1956, No 10, 49-52

Abstract : Description of a vacuum tube instrument, which measures dc voltage in the range from 0,1 to 1200 volts, with an input impedance of 11 megohm, alternating voltage at low frequency (30 to 50,000 cycles) in the range of 0,1 -- 1200 with an input impedance of 3 megohms, high frequency voltage up to 150 Mc in therange of 0,1 -- 120 volts with an input impedance of 1,5 megohms, capacitances from 1 micromicrofarad

Card : 1/2

USSR / Radiophysics. Radio Measurements. I-7

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12590

to 10,000 micromicrofarads, dc from 10 microamperes to 600 ma. The heart of the circuit is a dc voltmeter, used in a bridge circuit employing a 6N1P tube with a 150 microamp meter connected in the cathode circuit. When the line voltage fluctuates within ± 15 percent, the additional error of the instrument does not exceed 1 -- 2 percent.

Card : 2/2